CLAIMS

WHAT IS CLAIMED IS:

1. An attachment for a wireless communication device, said wireless communication device having an antenna, and outer casing, a communication port and a device processor, said

5   attachment comprising:

an outer casing adapted to couple to said outer casing of said wireless communication device;

an attachment processor;

a first input device; and

a connector adapted to mate with said communication port of said wireless communication

10   device, such that electrical signals may be communicated between said antenna and said

attachment processor without said signals being received by said device processor when

said connector and said communication port are mated together.

2. The attachment according to claim 1, wherein said wireless communication device is one of a wireless telephone, a personal digital assistant, and a computer.

15 3. The attachment according to claim 1, wherein said first input device is one of a magnetic strip reader, a smartcard reader, an optical scanner, a fingerprint scanner, a signature pad, or a proximity detector.

4. The attachment according to claim 3, wherein said first input device is a magnetic stripe reader, said magnetic stripe reader having a slot and a reader head, said slot extending from a

20   first opening in said outer casing of said attachment to a second opening in said outer casing of said attachment, and wherein said reader head forms a portion of a side wall of said slot.

5. The attachment according to claim 4, wherein said slot is substantially parallel to a bottom surface of said outer casing of said wireless communication device.

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6. The attachment according to claim 4, wherein said slot is substantially parallel to a side surface of said outer casing of said wireless communication device.

7. The attachment according to claim 1, said attachment processor adapted to process input information received from said input device to generate attachment-processed data to send to said antenna for transmission to a remote computer.

8. The attachment according to claim 7, wherein said attachment-processed data is generated by at least one of encrypting said input information, dividing said input information into data packets, and creating header information to append to said input information.

9. The attachment according to claim 1, wherein said device processor, said antenna, and at least one of said communication port and said attachment processor are connected by an logical bus.

10. The attachment according to claim 9, wherein said device processor and at least one of said communication port and said attachment processor have unique bus addresses, and a message received by said antenna includes information identifying the bus address of the intended recipient of said message.

11. The attachment according to claim 1, wherein said connector is an RS-232 connector.

12. The attachment according to claim 1, further including a selectively engageable latching mechanism and a release mechanism that may be activated to detach said attachment from said wireless communication device.

13. The attachment according to claim 12, wherein said release mechanism is a release button that may be pressed to disengage said latching mechanism.

14. The attachment according to claim 1, further including a second input device.

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15. The attachment according to claim 14, wherein said second input device is one of a magnetic strip reader, a smartcard reader, an optical scanner, a fingerprint scanner, a signature pad, or a proximity detector.

16. The attachment according to claim 14, wherein said first input device is a magnetic stripe reader and said second input device is a smartcard reader, and said attachment further including a slot having a shallow channel portion through which a portion of a card bearing a magnetic stripe may be swiped and a deeper channel portion of sufficient depth to permit a card bearing a smartchip to be inserted into said slot.

17. The attachment according to claim 14, said processor adapted to process input information received from said first input device in a first manner and adapted to process input information received from said second input device in a different second manner, such that a remote computer to which processed data from said attachment processor is sent can determine whether said processor received said input information from said first input device or said second input device.

18. The attachment according to claim 1, said outer casing of said attachment having a recessed portion conforming to a surface of said outer casing of said wireless communication device.

19. The attachment according to claim 1, further including an attachment memory encoded with instructions to be executed by said attachment processor.

20. The attachment according to claim 19, wherein said attachment processor begins executing said instructions when input information is received at said input device.

21. The attachment according to claim 1, further including a data port for receiving and transmitting data independent of said antenna.

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22. The attachment according to claim 21, wherein said data port receives and transmits at least one of infrared, IEEE 802.11 and Bluetooth signals.

23. The attachment according to claim 1, wherein a first communication link established between said attachment and a remote computer over a communication network is separate from a

5   second communication link established between said wireless communication device and said remote computer.

24. The attachment according to claim 1, wherein a first application being executed by said device processor is suspended while a second application is executed by said device processor.

10   25. A wireless communication apparatus for transmitting information to and receiving information from a remote computer over a communication network, said wireless communication apparatus comprising:

a wireless communication device having an antenna, a device processor, an outer device casing, a communication port, and an output device; and

15   an attachment having an attachment processor, a first input device, a connector, and an outer attachment casing, said attachment being removably coupled to said wireless communication device, wherein

said connector mates with said communication port when said attachment is coupled to said wireless communication device, and

20   said attachment processor is configured to communicate signals to said antenna without said signals being received by said device processor when said attachment is coupled to said wireless communication device.

26. The apparatus according to claim 25, wherein said wireless communication device is one of a wireless telephone, a personal digital assistant, and a computer.

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27. The apparatus according to claim 25, wherein said first input device is one of a magnetic strip reader, a smartcard reader, an optical scanner, a fingerprint scanner, a signature pad, or a proximity detector.

28. The apparatus according to claim 27, wherein said first input device is a magnetic stripe reader, said magnetic stripe reader having a slot and a reader head, said slot extending from a first opening in said outer casing of said attachment to a second opening in said outer casing of said attachment, and wherein said reader head forms a portion of a side wall of said slot.

29. The apparatus according to claim 28, wherein said slot is substantially parallel to a bottom surface of said outer casing of said wireless communication device.

30. The apparatus according to claim 28, wherein said slot is substantially parallel to a side surface of said outer casing of said wireless communication device.

31. The apparatus according to claim 27, further including a second input device, wherein said first input device is a magnetic stripe reader and said second input device is a smartcard reader, and further wherein said slot includes a shallow channel portion through which a portion of a card bearing a magnetic stripe may be swiped and a deeper channel portion of sufficient depth to permit a card bearing a smartchip to be inserted into said slot.

32. The apparatus according to claim 25, said attachment processor adapted to process input information received from said input device to generate attachment-processed data to send to said antenna for transmission to a remote computer.

33. The apparatus according to claim 32, wherein said attachment-processed data is generated by at least one of encrypting said input information, dividing said input information into data packets, and creating header information to append to said input information.

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34. The apparatus according to claim 25, wherein said device processor, said antenna, and at least one of said communication port and said attachment processor are connected by an logical bus.

35. The apparatus according to claim 34, wherein said device processor and at least one of said communication port and said attachment processor have unique bus addresses, and a message received by said antenna includes information identifying the bus address of the intended recipient of said message.

36. The apparatus according to claim 25, wherein said connector is an RS-232 connector.

37. The apparatus according to claim 25, further including a selectively engageable latching mechanism and a release mechanism that may be activated to detach said attachment from said wireless communication device.

38. The apparatus according to claim 37, wherein said release mechanism is a release button that may be pressed to disengage said latching mechanism.

39. The apparatus according to claim 25, said attachment further including a second input device.

40. The apparatus according to claim 39, wherein said second input device is one of a magnetic strip reader, a smartcard reader, an optical scanner, a fingerprint scanner, a signature pad, or a proximity detector.

41. The apparatus according to claim 39, said processor adapted to process input information received from said first input device in a first manner and adapted to process input information received from said second input device in a different second manner, such that a remote computer to which processed data from said attachment processor is sent can determine whether said processor received said input information from said first input device or said second input device.

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42. The apparatus according to claim 25, said outer casing of said attachment having a recessed portion conforming to a surface of said outer casing of said wireless communication device.

43. The apparatus according to claim 25, said attachment further including an attachment memory encoded with instructions to be executed by said attachment processor.

5 44. The apparatus according to claim 25, wherein said attachment processor begins executing said instructions when input information is received at said input device.

45. The apparatus according to claim 25, wherein said device processor is adapted to instruct a user to provide input information using said first input device.

46. The apparatus according to claim 45, wherein said output device of said wireless
10 communication device is a display, and further wherein said device processor instructs a user to provide said input information by displaying a message on said display.

47. The apparatus according to claim 45, wherein said output device of said wireless communication device is a speaker, and further wherein said device processor instructs a user to provide said input information by playing a recorded audio message on said speaker.

15 48. The apparatus according to claim 25, wherein said device processor establishes a communication link with a remote computer using said antenna.

49. The apparatus according to claim 48, wherein said attachment processor receives input information from said first input device, processes said input information to generate attachment-processed data, and sends said attachment-processed data to said remote
20 computer using said antenna over said communication link.

50. The apparatus according to claim 25, wherein said device processor executes one of a JAVA software application and a WAP software application.

51. The apparatus according to claim 25, wherein said attachment processor executes one of a JAVA software application and a WAP software application.

52. The apparatus according to claim 25, further including a data port for receiving and transmitting data independent of said antenna.

5   53. The apparatus according to claim 52, wherein said data port receives and transmits at least one of infrared, IEEE 802.11 and Bluetooth signals.

54. The apparatus according to claim 25, wherein a first communication link established between said attachment and a remote computer over a communication network is separate from a second communication link established between said wireless communication device and

10   said remote computer.

55. The apparatus according to claim 25, wherein a first application being executed by said device processor is suspended while a second application is executed by said device processor.

56. A system for conducting electronic transactions, said network comprising:

15   a communication network;

a remote computer connected to said communication network;

a wireless communication device having an antenna, a device processor, an outer device casing, a communication port, and an output device; and

an attachment having an attachment processor, a first input device, a connector, and an outer

20   attachment casing, said attachment being removably coupled to said wireless communication device, wherein

said wireless communication device and said attachment are connected to said communication network via said antenna such that said wireless communication device

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and said attachment can transmit information to and receive information from said remote computer over said communication network,

said connector mates with said communication port when said attachment is coupled to said wireless communication device, and

5   said attachment processor is capable of communicating signals to said antenna and receiving signals from said antenna without said signals being received by said device processor.

57. The system according to claim 56, wherein said remote computer includes at least one of firewall, a gateway server, a processing server and a database server.

58. The system according to claim 56, wherein said remote computer communicates with said

10   wireless communication device according to the WAP protocol.

59. The system according to claim 56, wherein a message transmitted from one of said wireless communication device and said attachment includes one of a password and user identification information.

60. The system according to claim 56, wherein a communication link between said remote

15   computer and said wireless communication device is established.

61. The system according to claim 60, wherein said communication link is established by said remote computer.

62. The system according to claim 60, wherein said communication link is established by said wireless communication device.

20   63. The system according to claim 60, further including a second communication link established between said remote computer and said attachment.

64. The system according to claim 63, wherein said second communication link is established by said remote computer.

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65. The system according to claim 63, wherein said second communication link is established by said attachment.

66. The system according to claim 63, wherein execution of an application by said device processor is suspended when said second communication link is established.

5   67. The system according to claim 63, wherein said first communication link transmits information according to a first protocol and said second communication link transmits information according to a second protocol different from said first protocol.

68. The system according to claim 56, further including an affiliated computer.

69. The system according to claim 68, wherein said remote computer establishes a
10   communication link with said affiliated computer and retrieves information from said affiliated computer to generate a response, and further wherein said remote computer transmits said response to said wireless communication device.

70. The system according to claim 68, wherein said remote computer receives attachment-processed data from said attachment processor and transmits data related to said attachment-
15   processed data to said affiliated computer.

71. The system according to claim 69, wherein said communication link is established over said communication network.

72. A method of conducting an electronic transaction using a wireless communication device and an attachment coupled to said wireless communication device, said wireless communication
20   device having an antenna and a device processor, and said attachment having an input device and an attachment processor, said method comprising:

coupling said attachment to said wireless communication device so as to permit transmission of an electronic signal between said attachment and said antenna;

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establishing a communication link between said wireless communication device and a remote

computer using said antenna;

by said attachment processor, receiving input information from said input device and

processing said input information to generate attachment-processed data;

5   by said attachment processor, transmitting attachment-processed data related to said input

information to said antenna, whereby said attachment-processed data is not accessible to

said device processor;

transmitting said attachment-processed data from said antenna to said remote computer;

by said remote computer, processing said attachment-processed data to produce a response;

10   by said remote computer, transmitting said response to said antenna; and

by said device processor, processing said response.

73. The method according to claim 72, wherein said communication link between said wireless

communication device and said remote computer is established by said wireless

communication device.

15   74. The method according to claim 72, wherein said communication link between said wireless

communication device and said remote computer is established by said remote computer.

75. The method according to claim 72, said wireless communication device having a

communication port and said attachment having a connector, wherein coupling said

attachment to said wireless communication device includes mating said connector with said

20   communication port.

76. The method according to claim 75, coupling said attachment to said wireless communication

device includes aligning said connector with said communication port.

77. The method according to claim 72, said wireless communication device having an outer

casing and said attachment having a recessed portion, wherein said recessed portion includes

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a surface conforming to a corresponding surface of said outer casing of said wireless communication device, said coupling said attachment to said wireless communication device further including placing at least a portion of said wireless communication device in said recessed portion such that said surface of said recessed portion is in contact with said

5 corresponding surface of said outer casing of said wireless communication device.

78. The method according to claim 72, processing said input information to generate attachment-processed data including at least one of encrypting said input information, dividing said input information into data packets, and creating header information to append to said input information.

10 79. The method according to claim 72, further including, by said device processor, prompting a user to input information to said attachment processor via said input device.

80. The method according to claim 79, wherein said wireless communication device includes a display, said prompting further including displaying a message to said user on said display.

81. The method according to claim 79, wherein said wireless communication device includes a

15 speaker, said prompting further including playing a recorded audio message to said user on said speaker.

82. The method according to claim 72, further including suspending an application being executed by said device processor before said attachment-processed data is transmitted to said antenna.

20 83. The method according to claim 72, further including resuming said application being executed by said device processor before said device processor processes said response.

84. The method according to claim 72, further including establishing a second communication link between said attachment and said remote computer using said antenna.

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85. The method according to claim 84, wherein said attachment-processed data is transmitted to said remote computer over said second communication link and said response is transmitted to said wireless communication device using said communication link between said wireless communication device and said remote computer.

5   86. A method of conducting an electronic purchase transaction using a wireless communication device and an attachment coupled to said wireless communication device, said wireless communication device having an antenna and a device processor, and said attachment having an magnetic stripe reader and an attachment processor, said method comprising:

coupling said attachment to said wireless communication device so as to permit transmission

10   of an electronic signal between said attachment and said antenna;

establishing a first communication link between said wireless communication device and a remote computer using said antenna;

by said device processor, executing an application to generate purchase price information and to transmit said purchase price information to said remote computer using said antenna

15   over said first communication link;

establishing a second communication link between said wireless communication device and a remote computer using said antenna;

by said attachment processor, receiving input information from said magnetic stripe reader and processing said input information to generate attachment-processed data;

20   by said attachment processor, transmitting attachment-processed data related to said input information to said antenna;

transmitting said attachment-processed data from said antenna to said remote computer over said second communication link;

by said remote computer, processing said attachment-processed data to determine at least one

25   of a credit card account number, a bank account number, the identity of a credit card issuer, the identity of a purchaser's bank, and the identity of a purchaser;

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by said remote computer, establishing a third communication link between said remote

computer and an affiliate computer to determine whether said purchaser is authorized to

make a purchase in the amount of the purchase price.

by said remote computer, transmitting a response over said first communication link to said

5   antenna indicating whether the purchaser is authorized to make said purchase; and

by said device processor, processing said response.

87. The method according to claim 86, further including prompting a user to swipe a magnetic

stripe-bearing card using said magnetic stripe reader.

88. The method according to claim 87, wherein said wireless communication device includes a

10   display, said prompting including displaying a message to said user on said display.

89. The method according to claim 87, wherein said wireless communication device includes a

speaker, said prompting including playing a recorded audio message to said user on said

speaker.

90. The method according to claim 72, further including suspending said application being

15   executed by said device processor before said attachment-processed data is transmitted to

said antenna.

91. The method according to claim 72, further including resuming said application being

executed by said device processor before said device processor processes said response.